

# BLIP Operations 2-21-12

- Status – running at 117.1 MeV @75μA
  - Shutdown Tuesday-Saturday morning. Weekly operations for 70.5 hours
- Issues
  - BLIP shutdown after vacuum leak was detected on Tuesday morning. Entry on Wednesday morning confirmed the leak and cause. The AlBeMet beam window was badly corroded. It was removed.

# AlBeMet beam window (4" diameter)



BLIP water window (measured 4950R/h at  
10cm)



# BLIP repair

- Observations and actions

- Radiation dose measured 4950 R/h at 10cm!
- Failure occurred after 5.5 weeks of beam compared to 7 years for previous window of same design.
- water all over implies leaked water vaporized and then condensed on all cooler surfaces.
- no obvious crack, hole or burn mark visible implies possible failure of seal or cracked weld not visible in photograph.
- Sample of water taken and gamma spectroscopy performed to compare isotope content with BLIP cooling water samples. The spectra did not match.
- Water window replaced Friday and cooling system refilled.
- Saturday morning after final inspection for leaks, vacuum sections were replaced and pumped down.
- Beam restored at 11:23AM at reduced beam current ( $\sim 58\mu\text{A}$ ).
- Failed window will be transferred to main hot cell in bldg. 801 for closer inspection and possible determination of cause of failure.